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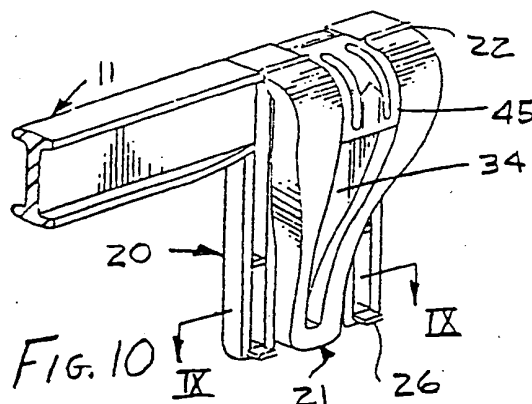
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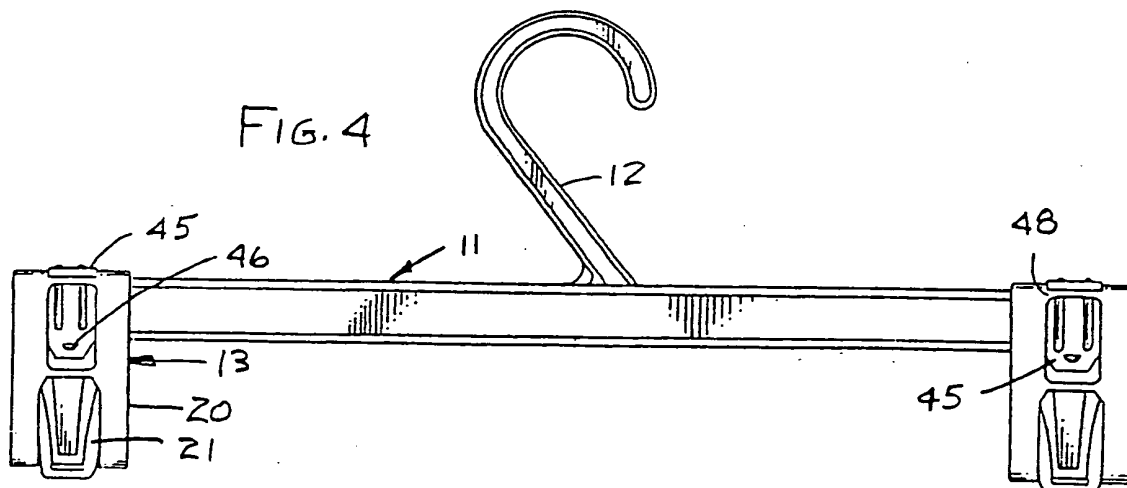
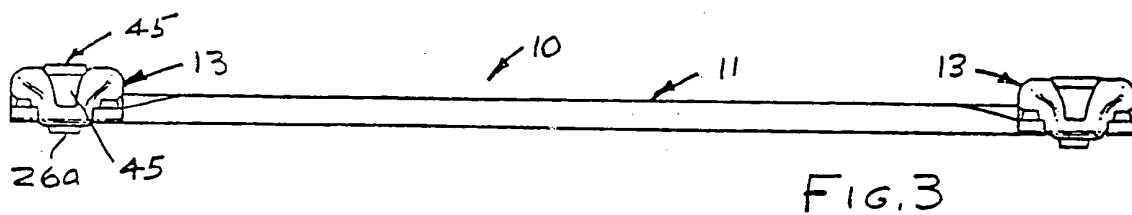
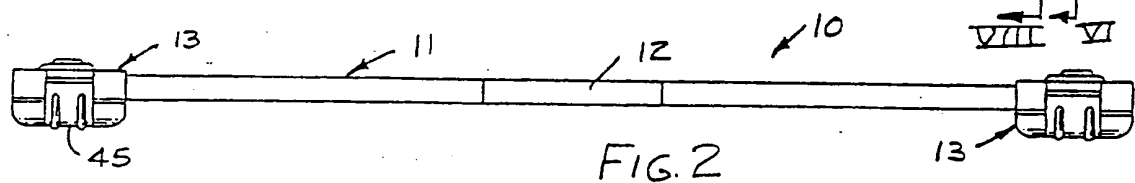
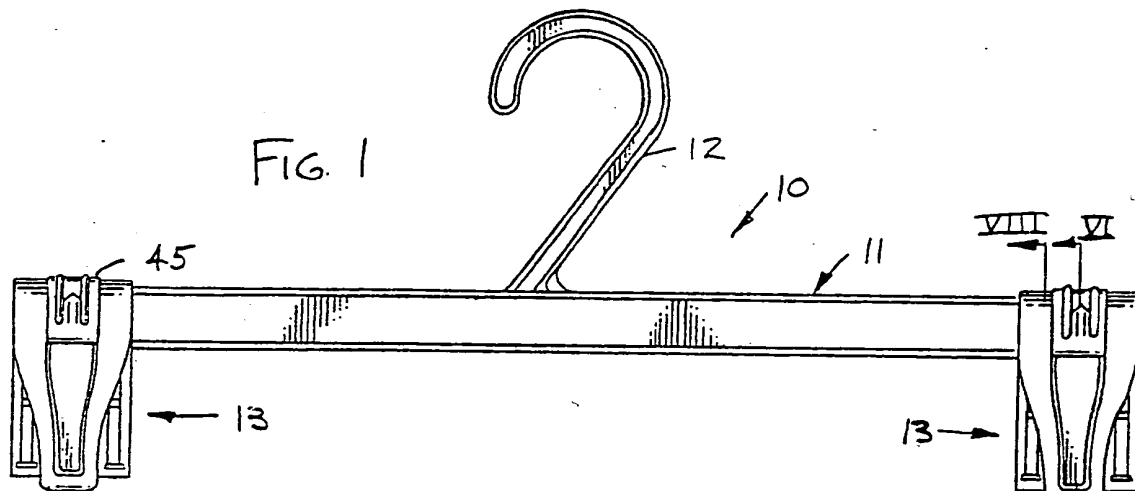
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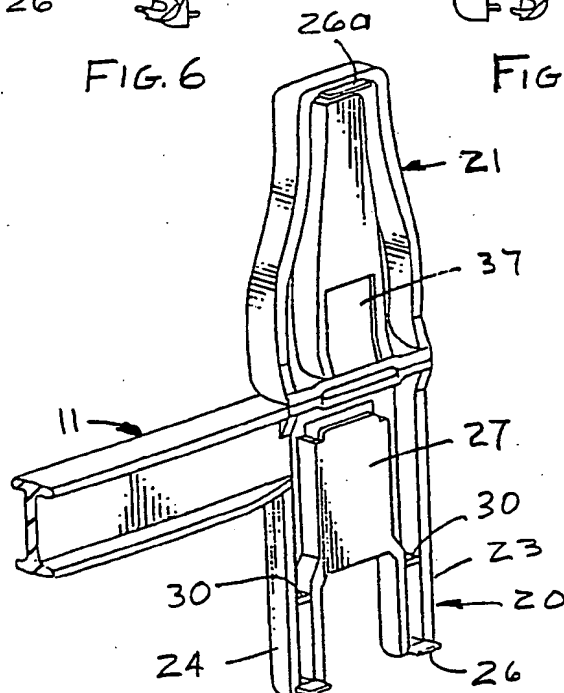
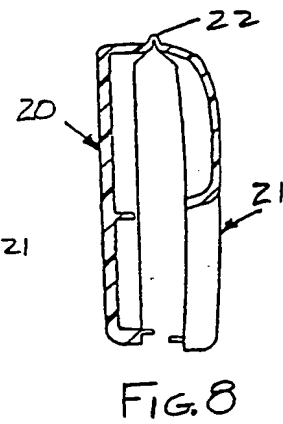
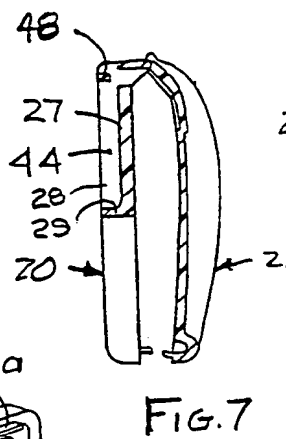
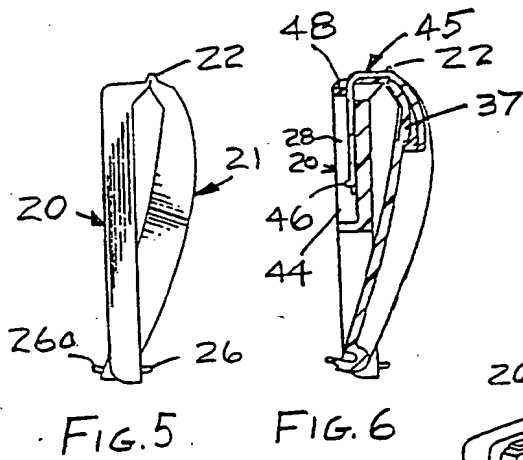
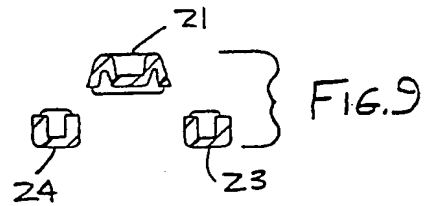
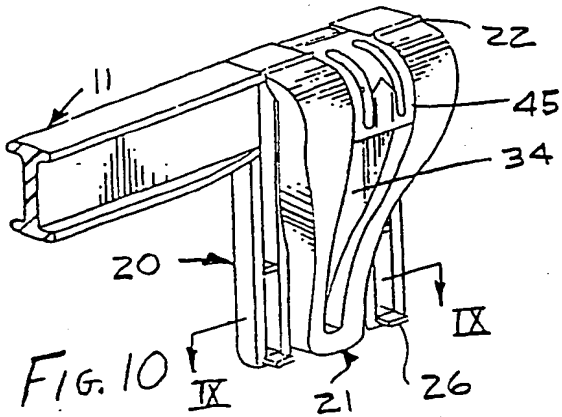
(54) Garment hangers

(57) A garment hanger of the garment clamping type has a pair of jaws (20, 21), the first one of which is integral with the hanger body and the other is pivotal about the top of the first jaw. A resilient clip (45) slidably seated over the tops of the jaws resiliently holds the jaws in garment clamping position. The front face of the pivoted jaw has an elongated recessed channel (34) to guide the user's finger to engage the clip and slide it into release position. The jaws are so designed that the free end of the pivoted jaw (21) can pass a limited distance through an opening (25) at the bottom of the first jaw (20) when no garment is present.



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"GARMENT HANGERS"

This invention relates to garment hangers and more particularly to garment hangers of the type having a pair of hinged jaws which, by means of a resilient, sliding element, are caused to resiliently clamp a
5 garment.

Garment hangers equipped with clamps hingedly joined together at their upper ends and resiliently urged into closed position to grip the garment have been known for a number of years. The basic concept of
10 this type of hanger is disclosed in U.S. Patent 3,767,092. The present invention constitutes an improvement over the basic clamping hanger construction described in that patent. It is designed to provide a clamp which will effectively grip garments of a wider
15 range of designs, sizes and weights. It is also designed to overcome the problem which has been experienced by some operators of difficulty in manipulating the locking clip. This has been the source of some difficulty inasmuch as the clip must be relatively
20 strong and resistant to sliding movement in order to provide sufficient clamping pressure to assure a positive grip on the garment. Also, some operators, particularly women, have experienced nail breakage in attempting to release the locking clip in existing
25 clamping hangers of this type.

According to the present invention, a garment clamp for a hanger has a rear jaw and a front jaw, the jaws being hingedly joined at their upper ends, the front and rear jaws having an aligned channel formed in
30 their outer faces, a resilient U-shaped closure member

seated in the channel having a rear leg portion movable lengthwise of the channel in the rear jaw and a front leg movable lengthwise of the channel in the front jaw, the front leg portion extending only part of the length of the channel in the front jaw; the channel in the front jaw being recessed into the front face of the front jaw and serving as a guide for a finger being moved lengthwise of the jaw toward the closure member.

The invention thus provides a garment clamp so designed that the operator's finger used to raise and release the resilient clamping member is automatically guided to the proper position to effect this operation. In so doing, the operator is largely protected from such problems as breaking fingernails or otherwise making an incorrect contact with the sliding clamp. Further, this invention provides an automatic guidance system for the operator's finger so that the operator does not have to concentrate on proper location of the finger when manipulating the clamp and, thus, can give greater attention to the garment. This is advantageous to sales personnel because it permits them to divert more of their attention to the customer rather than to the mechanical manoeuvres necessary to release the garment from the hanger.

The invention may be carried into practice in various ways but one garment hanger embodying the invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a front elevation view of the hanger;
Figure 2 is a top plan view of the hanger illustrated in Figure 1;

Figure 3 is a bottom view of the hanger illustrated in Figure 1;

Figure 4 is a rear elevation view of the hanger illustrated in Figure 1;

Figure 5 is an end view of one of the clamps of the hanger;

5 Figure 6 is a sectional elevation view taken along the plane VI-VI of Figure 1;

Figure 7 is a view similar to Figure 6 with the spring locking clip removed;

10 Figure 8 is a sectional elevation view taken along the plane VIII-VIII of Figure 1;

Figure 9 is a sectional view taken along the plane IX-IX of Figure 10;

15 Figure 10 is an oblique, fragmentary view of one end of the hanger illustrating the clamp in closed position; and

Figure 11 is a view similar to Figure 10 illustrating the clamp with the locking clip removed and the clamp opened to exhibit its internal structure.

20 Referring to Figure 1, numeral 10 identifies a hanger having a body 11 which is essentially an elongated beam supported at the centre by a hook 12 and having a clamp member 13 at each end. The clamp members are identical and, therefore, the description of one will be sufficient for both. Each of clamps
25 consists of a rear jaw 20 and a front jaw 21. The jaws are connected at the top by a thin web 22 (Figure 5) which serves as a hinge about which the front jaw 21 can be pivoted with respect to the rear jaw 20. The jaws are moulded as a single integral component from a
30 suitable plastic. They are also integral with the body 11 and are therefore, moulded simultaneously with the body 11 from a suitable plastic, such as polypropylene. As is best seen in Figure 11, the rear jaw or panel of

the clamp has a pair of vertical side members 23 and 24. The lower portion of the rear jaw is bifurcated by a generally rectangular opening 25 whereby the lower portions of the side members 23 and 24 become, in effect, rear legs of generally U-shaped cross section. The lower ends of the side members 23 and 24 have garment gripping members 26. The centre portion 27 of the upper part of the rear jaw is offset forwardly to provide a track or channel 28 for the hereinafter to be described resilient clip (Figure 7). The lower end of the channel 28 is terminated by a cross member 29 which separates the end of the channel from the opening 25 (Figure 7). It also serves the purpose of reinforcing and stiffening the side members 23 and 24. The side members are also further stiffened by ribs 30. The rear jaw is basically rectangular since its sides are parallel and its width is constant throughout its length.

The front jaw has an elongated, central, recessed channel 34 which extends all of the way from the hinge at the top to almost the very bottom of the jaw. The upper portion of the channel is wider than the lower portion and for a short distance is of uniform width to provide a space in which a locking clip 45 can slide. The bottom of the channel is flat and the sides have a slight outward taper, just enough to permit the moulded clamp to be easily released from its mould. From a point which is approximately one-third of the height of the jaw from the bottom, the channel progressively widens until it reaches a point approximately two-thirds the distance above the bottom of the jaw where the side walls become parallel. In this portion, the channel has a raised panel 37 (Figure 6) which serves

as a stop for the locking clip when it is shifted to fully locked position (Figure 6). The lower end of the raised panel 37 forms a shallow step which acts to resist upward or release movement of the locking clip unless the locking clip is subjected to intentional and positive upward movement. The lower end of the locking clip 45 has an inturned end which facilitates contact by the operator and acts as a catch seating over the lower edge of the panel 37. Between the channel 34 and the outer edges of the front jaw, the web of the jaw is offset forwardly, thereby, providing not only the sides of the channel but also providing the sides of the entire front jaw. Thus, as will be clearly seen from Figures 9 and 11, the jaw is so configured structurally that it is highly resistant to any deflection. This is important in providing a positive grip on any garments with which the hanger is used. In this connection, the extended central channel 34 provides a strong twist-and deflection-resistant, beam-like structure which serves both the purpose of facilitating the use of the hanger and also giving the front jaw a very rigid and load resisting structure. This is particularly true as the lower portion of the front jaw becomes narrower. The jaw has a particularly high polar moment of inertia which resists both bending and twisting and, thereby, can be depended upon to positively support even heavy and bulky garments.

The lower portion is so designed that it will pass through the opening 25. In the preferred construction, the rear face of the recessed portion of the front jaw is in the same plane as the rear ends of the side walls of the jaw. By narrowing the width of the lower portion of the front jaw such that it will pass through

the opening 25, the clamp will have substantial clamping pressure on a garment even though the garment is quite thin. This provides a structure which will positively hold the garment even under conditions of continuing vibration or improper mounting of the garment within the clamp.

The clamp is held in closed position by the locking clip 45. The clip has a forward leg and a rearward leg. The length of the forward leg is such that it slides down the forward channel far enough to pass the inturned end over the end of the panel 37 with the rolled end of the clip cooperating with the lower end of the panel to provide a positive stop against the clip being unintentionally urged upwardly into released position as a result of its own resilience. The clip extends over the top of the clamp and has a rear leg 43 which is substantially longer than the front leg. The rear leg is slidably mounted in the channel 44 in the rear face of the rear panel. In doing so, the clip passes through a slot formed by the bridge 48 at the top of the channel. Preferably, the clip has a rearwardly extending stop 46 which engages a bridge 48 to prevent the clip from being completely released from the hanger when it is pushed into released position. The clip resembles the construction described in U.S. Patent 3,767,092 to which reference is made above. Once again, however, the structure of the channel in which the rear leg of the clip slides provides a strong, deflection resisting recess in the rear panel which provides the rear panel with a polar moment of inertia resisting twisting or other structural deflection. Also, the width of both the front and rear channels is such as to positively confine and guide the

clip.

By adding to the length of the clamp, it is possible with most garments to entirely enclose the hem or waistband portion at the top of the garment in the pocket formed between the jaws. Thus, the garment grippers 26 which extend from the bottoms of the rear jaw side members 23 and 24 and the grip 26a which extends from the front jaw can seat under the belt or thickened top portion of the garment and positively hold it against release even under severe conditions. Because of this additional length of the jaws, it is necessary to provide additional rigidity and strength to the jaws so that they will not simply deflect under the resistance of the garments sufficiently to release the garment inadvertently. This is accomplished by the cross-sectional configuration as previously explained.

It will be observed from Figure 11 that a hanger such as illustrated in Figures 1 to 4 can be moulded with the clamps and the body 11 as a single, integral piece without the necessity of any special movable parts in the mould because the part will be automatically released simply by the separation of a two-part mould. This not only reduces the initial cost of the moulds but also makes it possible to operate the moulding equipment at a higher rate of speed and, therefore, in a more economical manner. It will also be recognised that while an I-beam type of body structure has been shown for the beam 11, other shapes could be utilized with equal facility without adversely affecting both the functional characteristics of the hanger or the cost of its manufacture. At the same time, it is not necessary that the hook be an integral part of the moulded body, since a conventional wire

hook could be substituted without in any way changing the principles of the invention.

5 Because of the design and shape of the front jaw with the channel serving as a finger guide, it is unnecessary for the operator to utilize more than one hand to effectively release the garment from one of the clamps. This is particularly important for sales assistants and people in a similar position to facilitate the handling of the garment when it is being
10 displayed to a customer.

Having described a preferred embodiment of my invention, it will be recognized that modifications of my preferred embodiment can be made without departing from the principles of this invention.
15

CLAIMS

1. A garment clamp for a hanger has a rear jaw and a front jaw, the jaws being hingedly joined at their upper ends, the front and rear jaws having an aligned channel formed in their outer faces, a
5 resilient U-shaped closure member seated in the channel having a rear leg portion movable lengthwise of the channel in the rear jaw and a front leg movable lengthwise of the channel in the front jaw, the front leg portion extending only part of the length of the
10 channel in the front jaw; the channel in the front jaw being recessed into the front face of the front jaw and serving as a guide for a finger being moved lengthwise of the jaw toward the closure member.

15 2. A garment clamp as claimed in Claim 1 in which the front leg portion extends only a minor portion of the length of the channel in the front jaw.

20 3. A garment clamp as claimed in Claim 1 or Claim 2 in which the channel in the front jaw extends substantially the full length of the front jaw.

25 4. A garment clamp as claimed in Claim 1 or Claim 2 or Claim 3 in which the channel from a point substantially midway between its lower end and the end of the front leg portion of the closure member progressively widens to the width of the closure member both to guide the operator's finger toward the closure member and to permit the operator's finger to move
30 rearwardly into the channel as it approaches the lower

end of the closure member.

5 5. A garment clamp for a hanger as claimed in
any of the preceding claims in which the rear leg of
the clamp is of uniform width through its length, an
opening in and through the rear leg extending from the
lower end of the rear leg approximately half the height
thereof, the opening being flanked on each side by a
depending leg member, the leg members being spaced
10 apart a distance such that the lower portion of the
front jaw can pass between them.

15 6. A garment clamp for a hanger as claimed in
Claim 5 in which the legs are joined at the upper ends
by a cross bar, the cross bar also defining the lower
end of the channel in the rear leg portion.

20 7. A garment clamp for a hanger as claimed in
any of the preceding claims in which the lower portion
of the channel in the front jaw is substantially
narrower than an operator's finger and the upper
portion is wide enough to receive the operator's finger
between the sides of the channel.

25 8. A garment clamp for a hanger substantially as
described herein with reference to the accompanying
drawings.

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